

significant reductions in GLUT3 levels which correlated with greater amyloid- β ($A\beta$) and neurofibrillary tangle pathological burden in participants with AD pathology at post-mortem but without evidence of cognitive dysfunction in their lifetime. Some studies showed increased GLUT1, with others showing reduced GLUT1, levels in AD brain. A newly recognised GLUT12 appears to be increased in AD. Animal studies showed similar results with GLUT1 and GLUT3 knockout animal models exhibiting AD pathology, while overexpression of GLUT1 or treatment with metformin decreased $A\beta$ toxicity in a *Drosophila* model of AD. GLUT2 levels were increased in both human AD brain and in an animal model of AD. Imaging studies using fluorodeoxyglucose [^{18}F]FDG with positron emission tomography (FDG-PET) in AD subjects show reductions in glucose transport and glucose metabolism in areas most affected in AD. A small randomised control trial showed anti-diabetic medications improved the glucose transport in AD subjects.

Conclusion. GLUTs play a significant role in AD pathology with evidence suggesting that GLUT3 reductions may precede the onset of clinical symptoms, while GLUT2 and GLUT12 may have a compensatory role. Repurposing anti-diabetic drugs shows promising results in both animal and human studies of AD.

Battered woman syndrome and PTSD in women who kill their abusing partner: a study in medical jurisprudence

Sharmilaa Lagunathan

Leicester Medical School, University of Leicester

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Aims. The aim of the study was to identify any symptoms or features of Battered Woman Syndrome (BWS) or Post-traumatic Stress Disorder (PTSD) that may be associated with, or explain, abused women killing their abuser; and the extent to which such identified symptoms or features have been deemed, or are potentially relevant, to past and now reformed partial defences to murder in English law. Hence two sub-studies were completed.

Method. The first sub-study identified mental symptoms of BWS or PTSD apparent in battered women who kill their abuser; achieved by identifying relevant research papers, through applying a ‘rapid review’ approach to three databases: PubMed, PsychInfo and PsychArticles. The second sub-study identified by legal research reported Court of Appeal (CA) judgments on women appealing their conviction of the murder of their abusive partner. It then analysed the legal approach taken towards evidence of the effects of abuse upon these women before and after relevant statutory law reform (although no CA cases were identified post-reform).

Result. The first sub-study identified and reviewed six symptoms or features, within three quantitative and three qualitative studies, that appeared to be associated with, or described by, abused women killing their abuser. These included helplessness, symptoms associated with PTSD, plus fear, isolation, experience of escalation of violence and cycle of violence. From the CA cases the perpetrators of killings that occurred prior to 04.10.2010 (the date of law reform) were usually successful in having their conviction overturned based upon diminished responsibility; but not provocation, because of the requirement of ‘sudden loss of self control’. ‘Loss of control’, which replaced provocation,

appears highly likely to be capable of reducing murder to manslaughter based upon symptoms of BWS, or PTSD. However, the amended defence of diminished responsibility is likely to exclude evidence of BWS, but allow evidence of PTSD, because of its requirement of the defendant suffering from ‘a recognised medical condition’.

Conclusion. This study demonstrated particular symptoms or features of BWS or PTSD associated with abused women killing their abusers plus their very different relevance to two partial defences to murder, pre and post law reform.

Alcohol use disorder and its association with personal well-being and life satisfaction

Chau Sian Lim*, Zhen Wei Lew, Yoke Chiang Ng, Lai Huat Peh and Hatta Santoso Ong

Changi General Hospital

*Corresponding author.

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Aims. This study aims to find out how alcohol use disorder (AUD) correlates to personal well-being and life satisfaction.

Background. AUD is prevalent and leads to significant physical, physiological, and social-occupational impairment. Mental well-being involves the overall positive psychological state of a person – being well adjusted, socially engaged, and emotionally healthy. Despite the paradigm shift from purely treating mental illness to promoting positive mental health, there is limited literature describing the relationship between alcohol use disorder and mental well-being.

Method. This cross-sectional study was conducted in a general hospital in Singapore. Patients admitted across a span of two years were screened for possible alcohol use disorder. Patients were included if they were male, aged 21 years and above, and had the mental capacity to give consent. They were excluded if they had illicit drug use, acute mental illness, inability or refusal to give consent, or if they were already receiving intervention for addiction issues. Participants were administered the Alcohol Use Disorders Identification Test (AUDIT). Those who scored 8 or above were classified as being at risk for AUD, while those who scored 7 or less were classified as at low risk. They were also administered the Personal Wellbeing Index (PWI) and the ‘Satisfaction with Life as a Whole’ question. The PWI measures individuals’ subjective well-being across seven domains. The ‘Satisfaction with Life as a Whole’ question measures, on an eleven-point Likert scale, how satisfied the respondent feels with life in general. Demographic data were also collected and STATA v. 12.1 was used for statistical analysis.

Result. Among a total of 134 participants, 25 of them scored ≥ 8 on the AUDIT and 109 scored 7 or less. On the PWI, the group at risk scored significantly lower at 71.3 (95% CI: 66.0–76.7) compared to the group not at risk at 77.9 (95% CI: 75.8–79.9), $p < 0.01$. The results were similar on the ‘Satisfaction with Life as a Whole’ item. The group at risk had a mean of 6.72 (95% CI: 6.03–7.41) while the group not at risk had a mean of 7.67 (95% CI: 7.41–7.93), both $p < 0.01$. The differences between the high risk and low risk groups remained statistically significant even after adjusting for differences in age, race, education level, and employment status.

Conclusion. This study demonstrated a statistically significant association between AUD and personal well-being as well as satisfaction with life among males.

Transient musical hallucinations in a young adult male associated with alcohol withdrawal

Mao Lim^{1*}, Graham Blackman², Anthony David³ and Fahmida Mannan²

¹Cambridge University Hospitals NHS Foundation Trust;

²Department of Psychosis Studies, Institute of Psychiatry, Psychology and Neuroscience, King's College London and ³Institute of Mental Health, University College London

*Corresponding author.

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Aims. We present the case of a 25-year-old male who presented to A&E with isolated musical hallucinations, in the absence of audiological or neurological disease.

Background. Musical hallucinations (MH) are a form of complex auditory hallucinations whereby an individual experiences an instrumental and/or vocal melody in the absence of auditory stimuli.

Result. The patient had a history of recreational drug use and a family history of psychosis. Hallucinations, which were preceded by discontinuation of alcohol and re-initiation of citalopram for depression, resolved spontaneously after three days.

Conclusion. Aetiological factors are discussed alongside the existing literature. Whilst the underlying mechanisms underpinning musical hallucinations remains elusive, the case illustrates the potential role of alcohol withdrawal, serotonin toxicity, recreational drug use and genetic vulnerability.

Development of a co-produced tool for monitoring and supporting the mental health of young people

Joy MacKeith*, Anna Good and Sara Burns

Triangle

*Corresponding author.

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Aims. The aims were to develop and validate a tool for monitoring and supporting the mental health of young people. Based on extensive experience of developing similar tools, the hypothesis was that a user-friendly tool could be produced with sound psychometric properties.

Background. The Outcomes Star is a suite of collaboratively completed, strengths-based tools with the dual roles of both supporting and monitoring change. Service users are empowered through their active involvement in identifying their strengths and creating their care plan. Triangle, the creators of the Outcomes Star was approached by a number of organisations to develop a version of the Star for young people with mental health issues in early intervention services and also to support young people in managing a diagnosed mental illness.

Method. Using a series of focus groups and an iterative process of refinement we gathered data from practitioners and service users on the domains in which they wish to create change, and the steps of the change process. A draft version of the new tool was piloted in two organisations by 67 workers and 177 young people over six months. The pilot data were analysed to assess the psychometric properties of My Mind Star (acceptability, skew, factor structure, internal consistency, item redundancy and responsiveness).

Result. The resulting tool, My Mind Star consisted of seven domains: Feelings and emotions, Healthy lifestyle, Where you live, Friends and relationships, School, training and work, How you use your time and Self-esteem. Almost all young people and practitioners (94%) agreed that their completed Star was

‘a good summary of my life right now’ and that it gave a better idea of service users’ support needs. Psychometric analyses indicated a unidimensional structure with good internal consistency ($\alpha = .76$) and no item redundancy. My Mind Star was responsive to change between the first and second readings, with medium and small-medium effect sizes.

Conclusion. Initial findings suggest that My Mind Star has good psychometric properties and is perceived as acceptable and useful by young people and practitioners. Further research is planned to conduct a full validation of the psychometric properties of this Star including inter-rater reliability and predictive validity.

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The association between obesity and depression in adults: a meta-review

Abdi Malik Musa*, Samuele Cortese and Olivia Bloodworth

University of Southampton

*Corresponding author.

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Aims. Obesity and depression are increasing in prevalence and have become key issues in the public health of the modern day. We performed a meta-review to summarise the association between obesity and depression in adults.

Method. A systematic literature search was undertaken on MEDLINE, PsychINFO, EMBASE and Web of Science for systematic reviews (SRs) with or without meta-analyses (MA) on the association between obesity and depression in adults (>18 years) published before 18 September 2018. Any approach to define depressive disorders (e.g. via structured interview or code in medical file) was accepted. Likewise, any method to assess obesity was accepted. Screening, data extraction and quality assessment was completed by two reviewers independently, with a third reviewer to arbitrate any disagreement. AMSTAR 2 tool was used to assess the methodological quality and risk of bias of the pertinent SRs/MAs.

Result. After duplicate removal, we identified 6007 potentially pertinent citations. Following, title, abstract and full-text screening, 10 studies were included in the review; nine SRs with MAs and one SR. A statistically significant association between obesity and depression was reported in all nine SRs with MAs, with odds ratios ranging from 1.18 (95% CI = 1.11-1.26) to 1.57 (95% CI = 1.53-2.01). Increased severity of obesity (body mass index over 40) was associated with a greater odds of becoming depressed. Odds of developing depression were greater for obese females, compared to obese males, but this difference was not statistically significant. Depression was shown to be a significant risk factor for future obesity in all four relevant MAs with odds ratios ranging from 1.18 (95% CI = 1.13-1.23) to 1.40 (95% CI = 1.14-1.71). Depressed adolescent females had the highest odds of becoming obese, significantly more so than depressed adolescent males and depressed adults. The quality of the included studies were mixed with five scoring moderate quality, three low quality and two critically low quality.

Conclusion. The findings suggest a reciprocal association between depression and obesity, which may be modulated by age and gender. Future research should assess the potential effect of obesity and depression severity more carefully while also exploring the underlying mechanisms. These results warrant the investigation of the effect of obesity or depression intervention on the outcomes of the other.

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